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Albert S. Michalik, pllc  
Suite 193  
704-228th ave.  
sammamish, WA 98074

EXAMINER

ZHEN, LI B

ART UNIT PAPER NUMBER

2194

DATE MAILED: 04/18/2006

Please find below and/or attached an Office communication concerning this application or proceeding.

# Office Action Summary

Application No.

09/742,761

Applicant(s)

RAJAJAN ET AL.

Examiner

Li B. Zhen

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-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

## Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

## Status

- 1) ☒ Responsive to communication(s) filed on 30 January 2006.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

## Disposition of Claims

- 4) ☒ Claim(s) 1-51 is/are pending in the application.
- 4a) Of the above claim(s) \_\_\_\_\_ is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_\_ is/are allowed.
- 6) ☒ Claim(s) 1-51 is/are rejected.
- 7) ☐ Claim(s) \_\_\_\_\_ is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.


## Application Papers

- 9) ☒ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on \_\_\_\_\_ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.  
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

## Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some \* c) ☐ None of:
- ☐ Certified copies of the priority documents have been received.
  - ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
  - ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

\* See the attached detailed Office action for a list of the certified copies not received.

  
WILLIAM THOMSON  
SUPERVISORY PATENT EXAMINER

## Attachment(s)

- 1) ☒ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☒ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)  
Paper No(s)/Mail Date 7/04;3/04;9/01.
- 4) ☐ Interview Summary (PTO-413)  
Paper No(s)/Mail Date. \_\_\_\_\_.
- 5) ☐ Notice of Informal Patent Application (PTO-152)
- 6) ☐ Other: \_\_\_\_\_.

### DETAILED ACTION

1. Claims 1 – 51 are pending in the current application.

#### *Specification*

2. The applicant recites a number of co-pending applications by their title (p. 16, lines 4-5 and 13-14; p. 22, lines 16-17). Please update the copending applications with U.S. application serial numbers.

#### *Claim Rejections - 35 USC § 102*

3. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

4. **Claims 1-5, 7-10, 15-16, 22-26, 31, 35-39, 41, 43-49 and 51 are rejected under 35 U.S.C. 102(b) as being anticipated by “Response to UML 2.0 Request for Information” [hereinafter referred to as Clark].**

5. As to claim 1, Clark teaches a complete set of visual modeling tools for development of robust, efficient solutions to real business needs in the client/server, distributed enterprise, and real-time system environments [UML, Section 2, p. 2] and the method of:

providing a plurality of notations [Concrete Representations [Concrete Syntax], Fig. 1; p. 10], each notation comprising a visual representation [e.g. diagram, box, Fig. 1] of a model element [notation guide in Chapter 3 would probably be split into two: a precise definition of the concrete syntax...and a user guide to the language; Section 3.1.6, p. 22];

providing a plurality of semantics [Semantics Domain, Fig. 1, p. 10], each semantic separate from each of a plurality of notations [an architecture which separates concrete syntax, abstract syntax, semantics domain and the relationships between each

pair; Section 4.1, p. 24] comprising a meaning in a modeling environment of a model element [Section 4.4; p. 25]; and

associating a selected notation with a selected semantic to provide a model element having a visual representation and a meaning in a modeling environment [a mapping from the syntax [domain] to a semantics domain. Both syntax and semantics domains may have concrete representations; p. 10].

6. As to claim 2, Clark teaches the selected notation and the selected semantic each comprise an object [Fig. 4, p. 16], and wherein associating the selected notation with the selected semantic comprises connecting the selected notation object to the selected semantic object via object interfaces [basic mechanisms are classes and associations. Additional power comes from the ability to relate classes through generalisation and the ability to construct sets of objects by navigating associations and filtering; Section 3.1.2.3, p. 14 and p. 6, second to last paragraph].

7. As to claim 3, Clark teaches the objects are connected to a paradigm server [Section 3.1.3.2; p. 19].

8. As to claim 4, Clark teaches a notation data structure [Concrete Representations [Concrete Syntax], Fig. 1; p. 10] having a set of at least one interface for accessing a plurality of methods [basic mechanisms are classes and associations. Additional power comes from the ability to relate classes through generalisation and the ability to construct sets of objects by navigating associations and filtering; Section 3.1.2.3, p. 14] therein;

a semantic data structure [Semantics Domain, Fig. 1, p. 10] separate from the notation data structure [an architecture which separates concrete syntax, abstract syntax, semantics domain and the relationships between each pair; Section 4.1, p. 24], the semantic data structure having a set of at least one interface for accessing a plurality of methods [basic mechanisms are classes and associations. Additional power comes from the ability to relate classes through generalisation and the ability to construct sets of objects by navigating associations and filtering; Section 3.1.2.3, p. 14]

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therein, the semantic data structure being associated with the notation data structure to provide a model element [a mapping from the syntax [domain] to a semantics domain. Both syntax and semantics domains may have concrete representations; p. 10].

9. As to claim 5, Clark teaches the notation data structure comprises a notation object and the semantic data structure comprises a semantic object [basic mechanisms are classes and associations. Additional power comes from the ability to relate classes through generalisation and the ability to construct sets of objects by navigating associations and filtering; Section 3.1.2.3, p. 14] and wherein a paradigm server associates the notation object with the semantic object to provide the model element [a mapping from the syntax [domain] to a semantics domain. Both syntax and semantics domains may have concrete representations; p. 10].

10. As to claim 7, Clark teaches one of the methods of the notation data structure provides information identifying a library of notations to which the notation data structure belongs [Section 3.1.3.2. A kernel library, p. 19].

11. As to claim 8, Clark teaches one of the methods of the notation data structure provides type information corresponding to the notation data structure [Stereotypes can be seen as a simple way of extending concrete syntax, and support for them could be provided in the kernel library; Section 4.2, p. 24].

12. As to claim 9, Clark teaches one of the methods of the notation data structure provides subtype information corresponding to the notation data structure [Section 3.1.3.2, p. 19].

13. As to claim 10, Clark teaches one of the methods of the notation data structure provides a name of the notation data structure [names; p. 19, last paragraph].

14. As to claim 15, Clark teaches one of the methods of the notation data structure provides information indicative of whether the notation is capable of visually indicating attach-points at which arcs can connect [paths; p. 19, last paragraph].

15. As to claim 16, Clark teaches one of the methods of the notation data structure provides information indicative of a minimum and maximum size of the notation [Fig. 4, p. 16].
16. As to claim 22, Clark teaches one of the methods of the notation data structure provides information identifying a library of semantics [Section 3.1.3.2. A kernel library, p. 19] to which the semantic data structure belongs [Section 4.3 Relationships, p. 25].
17. As to claim 23, Clark teaches one of the methods of the semantic data structure provides type information corresponding to the semantic data structure [Stereotypes can be seen as a simple way of extending concrete syntax, and support for them could be provided in the kernel library; Section 4.2, p. 24].
18. As to claim 24, Clark teaches one of the methods of the semantic data structure provides subtype information corresponding to the semantic data structure [Section 3.1.3.2, p. 19].
19. As to claim 25, Clark teaches one of the methods of the semantic data structure provides a name of the semantic data structure [names; p. 19, last paragraph].
20. As to claim 26, Clark teaches the semantic data structure includes a set of at least one requirement related to notation data structures which can connect thereto [3.2 Constraint languages, p. 23].
21. As to claim 31, Clark teaches one requirement of the set requires that the notation data structure have a number of attach-points at which arcs can connect [paths; p. 19, last paragraph].
22. As to claim 35, Clark teaches the model element corresponds to a node, and wherein the node includes at least one method to determine the notation data structure and semantic data structure and corresponding thereto [Section 3.1.2.3, p. 14].

23. As to claim 36, Clark teaches the model element corresponds to an arc, and wherein the arc includes at least one method to determine the notation data structure and semantic data structure and corresponding thereto [paths; p. 19, last paragraph].

24. As to claim 37, Clark teaches a notation comprising a representation of a model element in at least one modeling environment, the notation including an interface configured to provide access to methods therein [UML, Section 2, p. 2];

a semantic [Semantics Domain, Fig. 1, p. 10] separate from the notation [an architecture which separates concrete syntax, abstract syntax, semantics domain and the relationships between each pair; Section 4.1, p. 24], the semantic comprising a meaning of a model element in at least one modeling environment [Section 4.4; p. 25], the semantic including an interface configured to provide access to methods therein [basic mechanisms are classes and associations. Additional power comes from the ability to relate classes through generalisation and the ability to construct sets of objects by navigating associations and filtering; Section 3.1.2.3, p. 14]; and

a paradigm server, [Section 3.1.3.2; p. 19] the server connected to a modeling environment and configured to access the methods of the notation and the methods of the semantic via their respective interfaces, [basic mechanisms are classes and associations. Additional power comes from the ability to relate classes through generalisation and the ability to construct sets of objects by navigating associations and filtering; Section 3.1.2.3, p. 14] and further configured to enable a determination as to whether the paradigm server, notation and semantic are each compatible [3.2 Constraint languages, p. 23], and if they are compatible, to associate the notation with the semantic to provide a model element in the modeling environment [a mapping from the syntax [domain] to a semantics domain. Both syntax and semantics domains may have concrete representations; p. 10].

25. As to claim 38, Clark teaches the notation and the semantic each comprise an object [basic mechanisms are classes and associations. Additional power comes from

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the ability to relate classes through generalisation and the ability to construct sets of objects by navigating associations and filtering; Section 3.1.2.3, p. 14].

26. As to claim 39, Clark teaches selecting a selected notation from a plurality of notations [Concrete Representations [Concrete Syntax], Fig. 1; p. 10], each notation comprising a visual representation [e.g. diagram, box, Fig. 1] of a model element [notation guide in Chapter 3 would probably be split into two: a precise definition of the concrete syntax...and a user guide to the language; Section 3.1.6, p. 22];

selecting a selected semantic from plurality of semantics [Semantics Domain, Fig. 1, p. 10], each semantic separate from each notation [an architecture which separates concrete syntax, abstract syntax, semantics domain and the relationships between each pair; Section 4.1, p. 24] and comprising a meaning in a modeling environment of a model element [Section 4.4; p. 25]; and

validating whether the selected notation [determining which constructs should be defined in the kernel library; p. 20] can be associated with the selected semantic [a mapping from the syntax [domain] to a semantics domain. Both syntax and semantics domains may have concrete representations; p. 10].

27. As to claim 41, Clark teaches associating the selected notation with the selected semantic to provide a model element [a mapping from the syntax [domain] to a semantics domain. Both syntax and semantics domains may have concrete representations; p. 10].

28. As to claim 43, Clark teaches connecting the selected notation object to the selected semantic object via object interfaces [Section 3.1.2.3, p. 14 and p. 6, second to last paragraph].

29. As to claim 44, Clark teaches having computer-executable instructions [by implementing, compiling and executing it as a program; Section 2.1.2.4, p. 5].



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30. As to claim 45, this is a product claim that corresponds to method claim 1, see the rejection to claim 1 above, which also meets this product claim.

31. As to claims 46-47, these are rejected for the same reasons as claims 2-3 above.

32. As to claim 48, this is a product claim that corresponds to method claim 4, see the rejection to claim 4 above, which also meets this product claim.

33. As to claims 49 and 51, these are rejected for the same reasons as claims 5 and 26 above.

***Claim Rejections - 35 USC § 103***

34. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

35. **Claims 6, 40 and 50 are rejected under 35 U.S.C. 103(a) as being unpatentable over Clark further in view of U.S. Patent No. 6,542,595 to Hemzal [cited in previous office action].**

36. As to claim 6, Clark doesn't explicitly disclose a server validating the semantic object.

However, Hemzal teaches a sever that validates a semantic object [e.g., see col. 10, lines 1 – 25].

37. It would have been obvious to one of ordinary skill in the art at the time the invention was made to apply the teaching of Hemzal into the system of Clark so that server validates that the semantic object. The modification would have been obvious because one of ordinary skill in the art would have been motivated so that a validation

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module can validate configuration data which can be used as operating parameters to a generating module, server, control module and storage.

38. As to claims 40 and 50, these are rejected for the same reasons as claim 6 above.

39. **Claims 11 – 14, 20, 21, 27 – 30, 33 and 34 are rejected under 35 U.S.C. 103(a) as being unpatentable over Clark in view of U.S. Patent No. 5,958,012 to Battat et al. [hereinafter referred to as Battat, cited in previous office action].**

40. As to claim 11, Clark doesn't explicitly disclose the notation data structure is capable of being resized.

However, Battat teaches one of the methods of the notation data structure provides information indicative of whether the notation data structure is capable of being resized" [e.g., see module changes in position in col. 9:18-37].

41. It would have been obvious to one of ordinary skill in the art at the time the invention was made to incorporate the teaching of Battat into the system of Clark, to resize the notation data structure because one of ordinary skill in the art would have been motivated to have all the displayed objects fitted in the window.

42. As to claim 12, Clark doesn't explicitly disclose the notation data structure is visually indicating selected and unselected states.

However, Battat teaches one of the methods of the notation data structure provides information indicative of whether the notation is capable of visually indicating selected and unselected states [e.g., see col. 12: 19-67 to 13:1-7 and FIG. 10G, item 'Mode' has 3 to be selected ['Camera Fly', 'Move Object' and 'Edit Object']].

43. It would have been obvious to one of ordinary skill in the art at the time the invention was made to incorporate the teaching of Battat into the system of Clark to visually indicate selected and unselected states because one of ordinary skill in the art

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would have been motivated to allow the user to select each of the various models used in the adaptive display.

44. As to claim 13, Clark does not explicitly disclose the notation is capable of being in a visible or a hidden state.

However, Battat teaches one of the methods of the notation data structure provides information indicative of whether the notation is capable of being in a visible or a hidden state [e.g., see col. 8:60-67 to 9: 1-17 and FIG. 3a, item 323].

45. It would have been obvious to one of ordinary skill in the art at the time the invention was made to incorporate the teaching of Battat into the system of Clark, to be capable of being in a visible or a hidden state because one of ordinary skill in the art would have been motivated to determine whether a preset threshold for visualization has been exceeded with either the status indicator being hidden at module 324 or the appropriate change of status signal being sent.

46. As to claim 14, Clark doesn't explicitly disclose the notation is capable of visually indicating hover-related states.

However, Battat teaches one of the methods of the notation data structure provides information indicative of whether the notation is capable of visually indicating hover-related states [e.g., see col. 14:25-36 and FIG. 11].

47. It would have been obvious to one of ordinary skill in the art at the time the invention was made to incorporate the teaching of Battat into the system of Clark to be capable of visually indicating hover-related states because one of ordinary skill in the art would have been motivated to when traveling over the map, status indicators show the aggregate status for cities and buildings, in the form of globes that hover over the objects.

48. As to claim 20, Clark doesn't explicitly disclose providing information indicative of the notation is capable of doing animations.

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However, Battat teaches one of the methods of the notation data structure provides information indicative of whether the notation is capable of doing animations [e.g., see col. 1:45-63].

49. It would have been obvious to one of ordinary skill in the art at the time the invention was made to incorporate the teaching of Battat into the system of Clark to provide information indicative of the notation is capable of doing animations because one of ordinary skill in the art would have been motivated so that website designers pay close attention to how much graphics, sound and animation could be included on their website pages.

50. As to claim 21, Clark doesn't explicitly disclose providing information indicative of a number of states that the notation can visually indicate.

However, Battat teaches one of the methods of the notation data structure provides information indicative of a number of states that the notation can visually indicate [e.g., col. 12:19-67 to 13:1-7 and FIG. 10G, item 'Mode' has 3 to be selected ['Camera Fly', 'Move Object' and 'Edit Object']].

51. It would have been obvious to one of ordinary skill in the art at the time the invention was made to incorporate the teaching of Battat into the system of Clark to provide information indicative of a number of states that the notation can visually indicate because one of ordinary skill in the art would have been motivated to allow the user to select each of the various models used in the adaptive display.

52. As to claims 27 – 30, 33 and 34, these are rejected for the similar reasons as claims 11 – 14, 20 and 21 above.

**53. Claim 17 is rejected under 35 U.S.C. 103(a) as being unpatentable over Clark in view of U.S. Patent No. 6,041,143 to Chui et al. [hereinafter referred to as Chui, cited in the previous office action].**

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54. As to claim 17, Clark doesn't explicitly disclose the notation is capable of zooming operations.

However, Chui teaches one of the methods of the notation data structure provides information indicative of whether the notation is capable of zooming operations [e.g., see col. 2:14-30].

55. It would have been obvious to one of ordinary skill in the art at the time the invention was made to incorporate the teaching of Chui into the system of Clark to be capable of capable of zooming operations because one of ordinary skill in the art would have been motivated so that the storage requirements for image files are reduced by storing only thumbnail data and the full image data in an image file, and producing image data structures for other resolution levels on the fly.

**56. Claims 18 and 32 are rejected under 35 U.S.C. 103(a) as being unpatentable over Clark in view of U.S. Patent No. 6,353,448 to Scarborough et al. [hereinafter referred to as Scarborough, cited in the previous office action].**

57. As to claims 18 and 32, Clark doesn't explicitly disclose providing information indicative of supported color depths.

However, Scarborough teaches one of the methods of the notation data structure provides information indicative of supported color depths [e.g., see col. 9:66-67 to 10: 1-26].

58. It would have been obvious to one of ordinary skill in the art at the time the invention was made to incorporate the teaching of Scarborough into the system of Clark to provide information indicative of supported color depths because one of ordinary skill in the a would have been motivated so that screen display of an end-user configuration screen for adjusting color depth and image display resolution to indicate the status of an object.

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**59. Claim 19 is rejected under 35 U.S.C. 103(a) as being unpatentable over Clark in view of U.S. Patent No. 5,907,704 to Gudmundson et al. [hereinafter referred to as Gudmundson, cited in the previous office action].**

60. As to claim 19, Clark doesn't explicitly disclose providing information indicative of an iconic representation.

However, Gudmundson teaches one of the methods of the notation data structure provides information indicative of an iconic representation [e.g., see col. 3:63-67 to 4:1- 12].

61. It would have been obvious to one of ordinary skill in the art at the time the invention was made to incorporate the teaching of Gudmundson into the system of Clark to provide information indicative of an iconic representation because one of ordinary skill in the art would have been motivated so that user can clicks on the "minimize" icon, the window will be restored.

**62. Claim 42 is rejected under 35 U.S.C. 103(a) as being unpatentable over Clark in view of U.S. Patent No. 6,430,538 to Bacon et al. [hereinafter referred to as Bacon, cited in the previous office action].**

63. As to claim 42, Clark doesn't explicitly disclose the associating is performed by a paradigm server.

However, Bacon teaches the associating is performed by a paradigm server [e.g., see col. 5:22-47].

64. It would have been obvious to one of ordinary skill in the art at the time the invention was made to incorporate the teaching of Bacon into the system of Clark so that the associating is performed by a paradigm server because one of ordinary skill in the art would have been motivated to reduce client side workload by using paradigm server to perform the associating.

### ***Conclusion***

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65. The prior art made of record and not relied upon is considered pertinent to applicant's disclosure.

U.S. Patent No. 6,222,537 discloses a user interface builder that provides support for creation of customized user interfaces, enabling users to associate images, animation, sound clips and other media with specific predefined states of a user interface control.

U.S. Patent No. 6,898,782 discloses a method for modeling an object-oriented system.

### CONTACT INFORMATION

66. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Li B. Zhen whose telephone number is (571) 272-3768. The examiner can normally be reached on Mon - Fri, 8:30am - 5pm.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, William Thomson can be reached on 571-272-3718. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

Li B. Zhen  
Examiner  
Art Unit 2194

  
WILLIAM THOMSON  
SUPERVISORY PATENT EXAMINER

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